SEPTEMBER
1969
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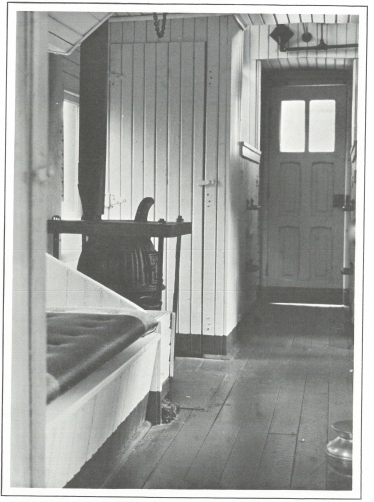
Live Steam®

THE MONTHLY MAGAZINE FOR ALL LIVE STEAMERS AND LARGE-SCALE MODEL RAILROADERS



Brass Lantern Award

Summer Live Steam Meets

Live Steam magazine

SEPTEMBER 1969 VOL. 3 NO. 9

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COVER PHOTO

Interior of the 1½" scale caboose that won the coveted "Brass Lantern Award!" at the NMRA Convention in Minneapolis this year. Photo by Carl Ulrich.

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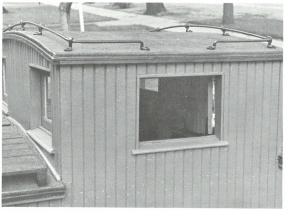
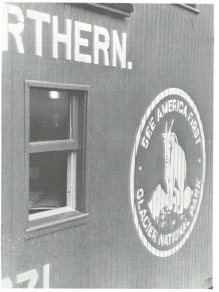
BRASS LANTERN AWARD

Awarded to William Zimmer and Carl Ulrich at the NMRA National Convention in August 1969 for their 1½" scale caboose. Complete in every visible and invisible detail, the Great Northern caboose was built from prototype plans and includes all the internal carbody framing. Carl Ulrich's photos tell more than words.

GREAT NORTHERN.
SEE AMERICA FIRST
GLACIER NATIONAL PARK
90771




RTHERN.
SEE AMERICA FIRST
GLACIER NATIONAL PARK

First run on the NEW TRACK IN WINDSOR

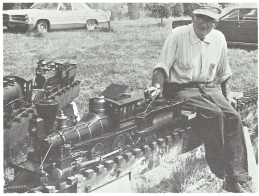
by Jack Hart
Hue Brakke Photos

A complete new track was ready for the Live Steamers who headed toward Windsor, Ontario, for the Big Steamup of the Ontario Sunparlor Lines on July 12th and 13th. The old trestle work which had carried ¾" and 1" equipment and riders for many years had been replaced by a new structure with added steaming bay facilities.

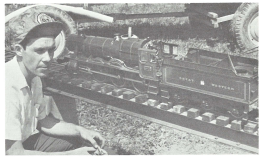
Nineteen engines operated during the two-day meet, all except one of them in ¾" scale. Live Steamers came from Ontario, Michigan, Wisconsin, Minnesota, Illinois and Ohio.

Saturday evening was spent at the home of Jack Prest, Canadian Division Secretary of the Brotherhood of Live Steamers, where Hue Brakke's movies and Al Liddell's slides of Live Steam Meets, as well as refreshments were loudly enjoyed by all!

No date has been set for future meets, but there will surely be more with the new track available.



Brian Lawson (1) of Dundas, Ontario, checks out his "Juliet" on blocks in the steaming bay and Rex Smith (2) from Port Rowan heads out with his GTR 2-6-0, the only 1" engine at the meet. Eric Corbett (3) of Dearborn Heights, Michigan, turned in a good performance with his 0-6-0 and Jack Green's "Hall Class" 4-6-0 from Hamilton was a beauty to watch. Alan Grigg attended from Hamilton with his 4-6-6-4 and Tom Sullivan from Wayne, Michigan, stepped right along with his ¾" 2-4-0 "Montezuma."



building the RARITAN

by William H. Morewood

This installment of *building the RARITAN* covers additional fittings which will be required when the Tender Hand Pump (20–3 through 20–12) are installed in the tender.

No special instructions are needed for these parts which are simply straight-forward machining operations.

ERRATA, REVISIONS AND ADDENDUM

July 1969 pages 8 and 9½

14–1 Boiler – longitudinal section should show silver soldered joints at the front flue sheet and all flues and fittings.

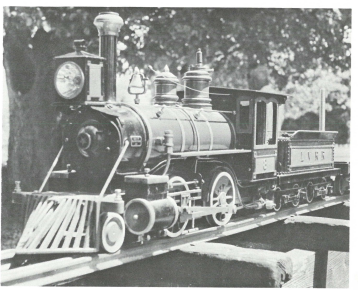
Boiler – rear view should show the crown stay extending up to the boiler shell with a crown stay angle on each side at the top.

25–2 Bushing – the 7/16" and ½" dimensions are transposed and the 11/16" diameter bore should read 11/32" diameter bore.

25–11 Blower line – the fitting should be made of phosphor bronze instead of brass.

24–1, –5, –6, –7 and –9 Boiler parts. The reference to "3/32 min. inside radius" should be specified as simply 3/32 inside radius. While this is the minimum, it should not exceed this dimension in order to give the maximum contact between the flanges and the boiler shell.

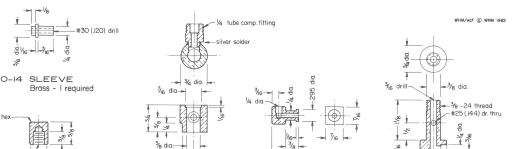
The "NOTE" directly below 24–3 Flue should apply to any parts specified to be made of copper. No brass should be substituted for any copper part.



PAUL FITT

The author's RARITAN on the steaming track at the Pennsylvania Live Steamers facilities in Paoli, Pennsylvania.

fittings



20–14 SLEEVE
Brass – 1 required

20–15 NUT
Brass – 1 req'd.

20–13 FEED LINE FITTING
Brass – 1 required

20–16 HOSE FITTING
Brass – 2 required

20–17 OUTLET FITTING
Brass – 1 required

HACKSAWS for the apprentice

by Jack D. McKenty, M.D.

Every book or article on tools mentions in it somewhere that quality tools are a better buy than cheap ones. Nowhere is this more true than with hacksaws. Hardware stores carry hacksaws ranging in price from about a dollar to $4.50 or so. Get the best; the cheap ones are too expensive in spoiled work, broken blades and ruined dispositions!

If possible, get two or three of them. Different kinds of blades are needed for different kinds of work, and there is the tendency to use the wrong blade rather than take the time to change. By having a different blade in each saw, this temptation is avoided. A small luxury, but a real one!

The hacksaw consists of a handle, a frame, and the blade. The frame is usually adjustable, and can take blades of 12, 10 and sometimes 8 inches in length, although 8 inch blades are not commonly available. The blades have a hole at each end, and mount on pins at either end of the frame. The mounts can be rotated, so that the blade can be aimed in any of four directions. The more expensive hacksaws usually have the pins offset on their mounts, so that the saw can cut flush against a flat surface.

Blades are mounted so the teeth point away from the handle. The back mount usually has a butterfly nuto adjust blade tension. Some hacksaws have the tension adjustment in the frame. Blades are usually tightened enough to ring a little when plucked; blades that are either too tight or too loose break more easily.

Blades come in three different tooth pitches as well as the different lengths; they can be obtained with 18, 24 and 32-teeth per inch. The 24-tooth is the general purpose blade. The 32-tooth blade is for sheet metal and thin-walled tubing. The 18-tooth blade is for thicker stock; generally ¼" and over. As a general rule, at least two teeth should be able to bear on the metal being cut at all times. Using the coarsest blade on thin metal may strip some teeth.

Blades are made of various steels. The high speed and alloy blades are generally worth the extra cost because of their long wearing properties. But a blade is still an expendable item. It is a false economy to keep using them until they are straight edges!

TECHNIQUE

The work should be held fimly in the vise, or clamped to the workbench. Stand facing the work, left foot forward, right hand holding the handle, left hand holding the far end of the frame. (If you are left handed, reverse the directions.) It often helps hold direction if the right index finger points along the side of the frame. Start the cut on the corner away from you. The first two or three short strokes can be made holding the saw with the right hand only. The left hand can be placed on the work with the tip of the thumb acting as a guide for the blade.

Be careful to keep the saw in line with the desired cut both vertically and horizontally. Care is better than speed. Pressure is applied on the forward stroke only; draw the saw back without pressure but without lifting it from the work. A few drops of cutting oil or even machine oil can ease the job especially on long cuts.

Try to use the full length of the saw blade for each stroke. Alternate teeth on the saw blade bend away from each other slightly; this makes the "kerf" or slot cut by the saw wider than the blade and minimizes binding. As the blade wears, the saw kerf gets narrower. If the blade is worn only in the middle, a full stroke will jam the wider, unworn end of the blade in the kerf, and slow things down. Similarly, never switch to a new blade in the middle of a long cut. The new blade is wider than the worn one, and jams in the kerf.

For cutting channel or angle iron, or other pieces with odd-shaped cross sections, position the work in the vise so that the cut will begin on a wide surface, not a narrow edge.

One of the more difficult jobs with the hacksaw is cutting along a straight line. The saw blade tends to wander away from the line and spoils the work. These difficulties are compounded by the fact that for long cuts it is usually necessary to have the blades at right angles to the frame, to have the frame clear of the work. This makes the saw more difficult to hold and control. It is possible to correct the aim of the blade by tilting the saw in the appropriate direction, but this puts a greater strain on the blade and may break it. The most important factor is to have the saw lined up with the cut when you first start. And be patient; you will improve with practice!

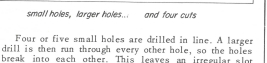
A good stunt with a long cut is to mount the work in the vise with the desired line flush with the top of the vise jaws. You can then saw merrily along the top of the vise with perfect accuracy; the hardened jaws guide the blade without damage to themselves.

A reentrant sometimes poses a special problem; such as pedestals on a locomotive frame:

first cut *second cut* *notch with a file* *3rd and 4th cuts*

The use of a file gives a place to start the cut across the bottom of the reentrant form.

A similar problem is cutting a piece out of an otherwise solid plate:



small holes, larger holes... and four cuts

Four or five small holes are drilled in line. A larger drill is then run through every other hole, so the holes break into each other. This leaves an irregular slot which can take the hacksaw blade. The saw is disassembled, the blade put halfway through the slot, and the saw assembled in position. The final finishing to line is, of course, done with a file.

ALLIED TOOLS

A "pad-saw" consists of a handle with a slot in it, into which a blade may be jammed. There is no frame; the far end of the blade sticks out into nothing. It is slow, but can work in tight places where a regular hacksaw wouldn't fit.

Metal cutting blades can be obtained for "fret saws" or "coping saws." These are useful for intricate shapes in sheet metal, where the wider hacksaw blade would not turn tight enough corners.

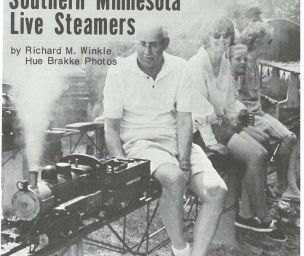
Special thick blades can be obtained for regular hacksaws. These are meant for cutting slots, such as in the heads of screws. They are sold by large hardware distributors in sets of three or four, and should be reserved for slotting. In a pinch, two ordinary blades can be mounted together in a saw to provide a wider kerf.

Wire blades are just that; a piece of steel wire with spiral teeth on it, and a ring at each end for mounting in a standard saw. The advantage is that it can cut in any direction; for example, across the bottom of the reentrant in Figure 1, without the necessity of filing a flat spot to start from. A carbide blade is similar but thicker. It will cut through anything, in any direction: coke bottles, files, lathe beds, sewer pipes, steamships, etc.

The English Abrafile blade is like a wire blade, but instead of a ring at each end, it has a little button. Special clips adapt it to the standard frame. Refer to Fig. 2. Instead of needing a slot to start from, the blade will fit through a single 1/8'' hole in one corner. The blades are fast cutting, inexpensive and have only one disadvantage; they are not available in this country.

Southern Minnesota Live Steamers

by Richard M. Winkle
Hue Brakke Photos



After being rained out in their June Meet, a meet on August 9th and 10th turned out to be perfect. Eight engines were operating on Al O'Neil's half-mile track in Lake City in addition to Al's 12" gauge 4–4–0. Ron Christensen's 0–6–0 (1) with Vern Hankins at the throttle, takes Mrs. Dick Johnson and daughter and Mrs. Hankins on a turn around the track. Ed Kolasinski's Hudson (2) gets some trackside adjustments from its builder and is followed "out of town" on another trip for Ron's 0–6–0 with Dick Johnson as engineer. His passengers are V. H. Christensen and Vern Hankins — and Dick Winkle is shown in the background at left.

Falfurrias is scene of

First Texas Live Steam Meet

by Leslie P. Burford

What is believed to be the first organized Live Steam meet in Texas was hosted by L. L. Yates over the past Labor Day weekend in Falfurrias, Texas. Mr. Yates' *Bright Star Track* is a 7½" gauge large oval about 500 feet long with a 200 foot lead track to a turntable and four steaming tracks in the boiler room of the Bright Star Laundry. Compressed air, steam, treated water, table water, fuel and shop facilities are available in the steaming bays.

There were 45 registered guests from a wide area including Dallas, Fort Worth, San Antonio and Houston as well as Corpus Christi and many of the lower Rio Grande Valley towns. With many of the local town folk dropping in all during the meet, the estimated attendance was about 75.

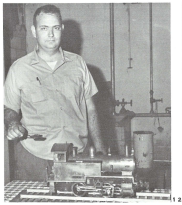
The ¾" scale *Juliet II* constructed by Paul DeVerter II of Houston proved to be the conversation piece of the meeting. Bright polished brass, exquisitely constructed in the finest of detail... she was a beauty to behold. She had all the craftsman's workmanship of a fine watch and looked more like a glass case mantle piece than a real operating locomotive. The ladies were most fascinated by her. Not having any 3½" track, *Juliet II* performed in an admirable manner fired with coal while setting on blocks. DeVerter did a superb job in building her.

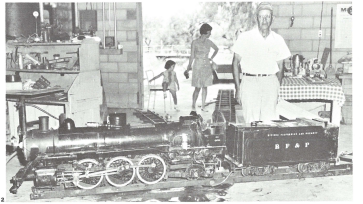
The technically interesting locomotive at the meet was built by John Enders of Austin. She was a fancy, high-stepping Atlantic and asked no quarters. The novelty of Enders' locomotive was that except for the cylinder block, boiler and drivers, all the rest was fabricated by welding with a limited amount of machining. This included the valve gear, side rods and trailing truck frame. She is a good performer.

Equally as authentic was an 0–4–0 switcher brought by Ces Beck from San Antonio. She was fired by butane and was as saucy as any locomotive on the track.

The real performer was host Yates' Pacific. She is oil fired (one of the few that really works!), smooth in operation and handled much like her larger sisters from which she was modeled. She was a clean-cut, lean locomotive and reminded one of the MKT Pacifics that hauled the crack *Texas Special* in its hayday. During the three-hour trial run the day before the meet, not one adjustment was made in the fuel oil feed valve, and only occasional water was pumped into the boiler by the steam-driven boiler feed pump. The pop valves lifted a few times as she made numerous turns around the track.

L. L. Yates and Manager Oscar Pena of the Bright Star Laundry – as well as the towns people of Falfurrias – were gracious hosts and the First Texas Meet will long be remembered.





Paul DeVerter of Houston (1) prepares to fire up his "Juliet II" at the First Texas Meet. Host Yates (2) and his Pacific which was back-shopped after a minor derailment which damaged the lead truck. The engine returned to the track before the end of the meet. Ces Beck (3) at the throttle of his "Burane Flash" switcher waits on the lead track while John Enders of Austin (4) takes a train load of passengers around the main line.

PHOTOS BY CAROL DRYDEN

FEED WATER SYSTEM

The feed water system of a Live Steam locomotive can be either simple or complicated depending upon the scale of the locomotive and the builder's desire for a system that is (1) just sufficient to do the job or (2) sophisticated enough to do just about everything. Regardless of what the system is, certain fundamentals must be observed since fundamentals are basic for any system and refinements must start from there.

A feed water system must have the following items in order to function:

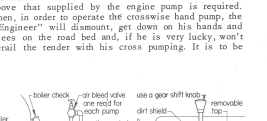
FEED WATER RESERVOIR

Under normal conditions the tender performs this function but on a saddle tanker or a side tanker the water is carried on the locomotive. Many builders complete their locomotive before their tender and, since they wish to get their locomotive in operation, they mount a tank, hand pump and a small coal bunker on a flat car and run that way until the tender is ready for service. Some owners of saddle tankers carry a supplemental supply of water and the hand pump on their riding car which permits them to run longer between water stops. This is a must when running on the larger layouts since a saddle tank can be drained very quickly.

TENDER-MOUNTED HAND PUMP

A tender-mounted hand pump is a necessity. Since it is a reserve pump, it is infrequently used – but when it is needed, it had better be working! Many novice builders do not realize how much water these small locomotives use, and in the interest of economy attempt to get by with only a tender-mounted hand pump. One run without some sort of a mechanical pumping device will change their mind in a hurry. Then they will have a real problem on their hands since an engine-mounted pump wasn't planned for.

A mistake that many novices make is that of mounting a hand pump crosswise in the reservoir (tank), usually behind or beneath the seat. With this arrangement it is impossible to pump water into the boiler with the locomotive in motion if and when extra water over and above that supplied by the engine pump is required. Then, in order to operate the crosswise hand pump, the "Engineer" will dismount, get down on his hands and knees on the road bed and, if he is very lucky, won't derail the tender with his cross pumping. It is to be granted that the under-seat pump mounting is the easiest to make; however, it is impractical from an operational standpoint since, in order not to hold up the rest of the operating club members, extra feed water should be pumped while running. This means that the pump should be located where it can be operated with the locomotive in motion. The pump should be located in either the right or left water leg for a submerged pump or the dummy water leg for a dry pump.



BASIC FEED WATER SYSTEM
(Submerged Pump)

DOUBLE-ACTING HAND PUMP INSTALLATION

A submerged hand pump is easier to install since the suction ports are open to the water and require no suction lines. However, care must be taken when designing the installation since, in order to keep from robbing the coal bunker space and maintaining uniformity of the two water legs, the pump will be a tight fit.

The dry installation is really the easiest and most satisfactory to make even though suction line plumbing is required. The advantage of the dry installation is that, by removing the sides of the coal bunker, the pump

is exposed for service and there is no problem of water leaks around the pump mounting bolts. When a pump is properly made and the water filler hole is properly screened to prevent the entrance of foreign material into the tank, the pump will run for years without attention. However, when it is necessary to remove a pump, it should be possible to remove it easily without tearing the tender apart. Also, it should be possible to replace the pump and reconnect the plumbing without starting a series of new leaks.

There are good double-acting hand pumps available either in casting form or completely machined and they will last the life of the locomotive. These pumps are available for 3/4" to 1½" scale. Some builders use surplus aircraft hydraulic hand pumps but these pumps haven't proven too satisfactory since they were designed for a petroleum base hydraulic oil, not water. They are also designed for more capacity than necessary for a Live Steam tender hand pump which makes for difficult pumping when the pump handle is shortened for tender use. The die-cast aluminum body has a high rate of corrosion when used with water instead of hydraulic oil.

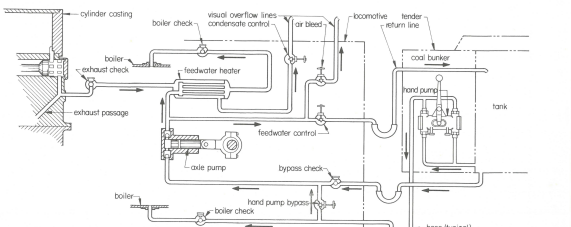
TENDER CONNECTIONS

Since the locomotive and tender are not rigidly connected, some form of flexible tubing should be used between the locomotive and tender. Where the locomotive has a trailing truck there is a lot of overhang beyond the drivers (rigid wheel base) which is apparent when the locomotive and tender are going through a sharp curve. The movement of the back of the cab in relation to the front of the tender is considerable. This means that the water hoses must have enough flexibility for the rear of the locomotive to swing over out of line of the tender on the sharpest curves and not kink or stretch the hoses taut. By leaving enough hose to hang in a "U" to within ½" of the track, enough freedom of movement will be attained.

The engine pump suction hose should be the next size larger than the hand pump discharge and overflow hoses. This is because the pumps can force water through a hose under atmospheric pressure (14 PSI at sea level). The hand pump hose has to withstand boiler pressure plus line loss, while the engine pump suction hose has to withstand the tendency to collapse under suction – particularly at a sharp bend or at a kink.

VALVING

Some form of control must be used to meter the feed water into the boiler. With crosshead pumps or an axle pump, two methods of feed water control are used with success: (1) a metering valve in the suction line and (2) a bypass valve(s) between the mechanical pump(s) and the boiler check valve(s), with the bypass returning surplus pump discharge to the tender. For the best regulation of feed water, the metering valve on the suction line (engine or tender) gives the most stable control since it is not affected by boiler pressure variations as is the bypass system. However, there is a problem in areas of water with high mineral content, the Southwestern United States for example. Lime scale will form at the down-stream side of the metering valve (point of pressure drop) and eventually plug the valve, cutting off water to the pump. If good water with a minimum of lime or distilled water is available, this is the best way to control feed water when an axle or crosshead pump is used. If the mineral content of the water is questionable, the bypass valve is best but this requires a return line to the tender. Where two crosshead pumps are used, each pump should have its own water regulation and each pump should have its own overflow valve to bleed off air that could cause a pump to lose its prime. It must be realized that a pump will discharge its air and pick up its suction if it is not working against a pressure or suction head. If the pump has to start off against a high pressure (boiler pressure), if it picks up air when the tender runs out of water during operation or if air seeps into the suction line through a leaky hose connection the pump will become airbound and lose its prime. It will compress and recompress its air and (due to its volumetric clearance) will never be able to bring water in through the suction valve because the air pressure within the pump on the suction stroke is higher than atmospheric pressure.



FEED WATER SYSTEM DIAGRAM

Live Steam

news

The Live Steam World was shocked and saddened in learning of the passing of R. E. "BOBBY" THOMPSON of the Southeastern Live Steamers Club in Charlotte, North Carolina, on June 26th.

It was through his untiring and unselfish efforts that Live Steam was brought to the Piedmont Area of the Carolinas. As long as the hobby survives, the name of Bobby Thompson will live on.

It was his love for the steam locomotive that made it possible for so many people to share his hobby. As everyone who ever knew him said, "He devoted many hours of time in helping others with their problems rather than working on his own equipment."

When Bobby first started with Live Steam, he was not as fortunate as many are today, since he had no plans to start with. His first lathe was an old second-hand one and, besides this, he did not even know how to run a lathe at that time.

It was not until the latter part of 1939 that Bobby built his first locomotive. It was a ¾" Hudson which is still in excellent running condition and has received only a few modifications.

From the time his first locomotive rolled off the assembly line there were many innovations created through his efforts which included perfection of the turbo-generator as well as many other ideas.

Many of Bobby's friends can relate in their own words how he never gave up on any project he started out to do. It was friends like Orice Ritch who worked so closely with Bobby in the building of Orice's locomotive 22 years ago who will miss him most; who can testify that he fulfilled the place that God has for men like him and through his deeds he will live on.

THOMAS C. PHILLIPS, SR.

6th ANNUAL EXPOSITION OF STEAM

The Gold Coast Railroad at Fort Lauderdale, Florida, will hold its Sixth Annual *Exposition of Steam* on Saturday, November 22nd, from 11:00 a.m. until 5:00 p.m.

Featured will be working models and full-sized engines of all types, including a 1909 Steam Traction engine, model steam road roller, locomotives, marine and stationary steam engines, pumps, pile drivers and many other interesting examples of the Steam Era.

An invitation is extended to anyone having full-size or model steam or gas engines of any type to place them on display at the show. The Gold Coast's Pacific #153 will furnish steam and air for operating the exhibits. Admission is free and the Gold Coast Railroad is at 811 SW 34th Street (corner of SW 9th Avenue) in Fort Lauderdale, Florida.

The Gold Coast Railroad, Inc., is a non-profit volunteer organization featuring steam train rides for the public every Sunday afternoon from 1:00 until 5:00 p.m.

For further information, contact R. L. Beekman, Chief Engineer, Gold Coast Railroad at the above address or phone 305 – 522-2937 or 305 – 524-5339.

GEORGE FRANKE, a well-known and respected Live Steamer in the Chicago area passed away on June 18th.

George had operated the M&G Cycle and Hobby Shop for many years and his coal-fired ¼" scale 4–8–4 is on display in a cabinet along with his ¾" 4–4–0 in the shop.

George's daughter, Ann, and her husband, Richard Kereluk, plan to continue the operation of his hobby shop.

He will be missed by the many who knew and thought very highly of him.

TEMPLE NIETER

STILL NO STEEL RAIL

Although several small steel producers indicated interest when approached to roll 1½" scale steel rail, a drawing and specific details furnished by Lou Bandy and Bob Maynard of the Cincinnati Cinder Sniffers, Inc., brought no results.

Many Live Steamers indicated an interest in this project and it is with regret that announcement was made of its futility. Lou Bandy and Bob Maynard are to be commended for their efforts on behalf of the hobby and their work may still bear fruit at some future day.

LIVE STEAM'S LEGAL IN MICHIGAN!

HEREAFTER, let the date of October 1st be marked in red on all Live Steamers' calendars to commemorate that date in 1969 when it again became legal to operate "miniature steam or marine engines used as a hobby" in Michigan!

For the previous four years, that state's adoption of the ASME Boiler Code as law made no provisions for any deviation from those dictates, and operation of any steam boiler from the smallest Fleischmann stationary steam engine sold in a toy store on up, was illegal unless it carried an ASME certification.

State Senator John F. Toepp from Michigan's 36th District (which includes Cadillac) had been appraised of the restrictions that the law placed on Live Steamers and when a House Bill covering antique traction steam boilers came to the Senate last year, he offered an amendment that would exempt equipment used strictly as a hobby from the provisions of the law. The bill, with Senator Toepp's amendment, passed the Senate and was sent back to the House for its concurrence. The House placed it back "in committee" and there it died for that session.

But Senator Toepp didn't forget the predicament of Michigan Live Steamers. When a similar bill reached the Senate from the House in early summer, he again rose to amend the bill so that "miniature steam or marine engines used as a hobby" should not be subject to the act. This time it passed both the House and the Senate and became effective on October 1st, 1969.

All Live Steamers in Michigan (and any from others that might ever give thought to bringing their engine to Michigan) ought to drop a note to Senator Toepp with a word of thanks for his efforts in our behalf. If nothing more, a simple *Thanks from another Live Steamer* with your name on a post card or in a letter and mailed to Senator John F. Toepp, State Capitol Building, Lansing, Michigan 48902, would let him know that his actions did not go by unnoticed or unacknowledged. It may be a good thing to do it right now, before it gets overlooked!

GOING TO THE NATIONAL MEET?

Although it may seem off in the future, the National Meet of the BLS in Los Angeles on May 29, 30 and 31 is well into its planning stages by the host club, the Los Angeles Live Steamers.

To assist with this great task, they ask that we notify them of our intention to attend as well as the equipment we will bring. They want to know the number of locomotives, cars (by gauge), stationary engines, canpers, trailers to provide for. Please send this information immediately to Joel Corbin, 12723 Kittridge Street, North Hollywood, California 91606 and mark your envelope "BROTHERHOOD MEET" so it can be properly directed. Be sure to include a self-addressed stamped envelope, too, for a reply.

If you will need motel reservations, they will arrange for this provided you tell them what you want and the number of people in your party.

There will probably be a registration fee this time to offset some of the expense. More about this later.

One of the big movie catering companies will be on hand to serve meals at all times and there may be parking space nearby for trailers.

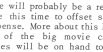
If you plan to operate your engine and equipment, a set of printed regulations for operation and safety will be supplied to you when you register. Be sure your rolling stock will meet the recommended standards of wheel gauges back-to-back with no sharp flanges. Current boiler inspection certificates will be accepted, otherwise a boiler check at a pressure of 1.5 times the safety valve full release will be made.

The Los Angeles Live Steamers facility has three gauges at ground level: ¾" scale 3½" gauge; 1" scale 4⅝" gauge; 1½" scale 7½" gauge. Be sure to bring your traction and stationary engines!

SPECIAL NOTE: This meet is for all Live Steamers and a BLS Membership Card is not required.

LOS ANGELES MEETING
NATIONAL MEET IN 1970
BROTHERHOOD OF LIVE STEAMERS

Coupler Height



Flange Gauge

Tire Profile

RECOMMENDED DIMENSIONS

TRACK SCALE	G	B	T	W	F	R	C
3/4"	3.47" +.01 -.02	3.28" +.01 -.02	.34	.094	.094	.04	2.19
1"	4.69" +.01 -.02	4.44" +.01 -.02	.38	.125	.156	.06	2.89
1½"	7.44" +.01 -.02	7.12" +.01 -.02	.59	.156	.188	.08	4.38

MAY 29 - 30 - 31 1970

Scheduled Meets

November

22 6TH ANNUAL EXPOSITION OF STEAM
Gold Coast Railroad
Ft. Lauderdale, Florida
11:00 a.m. to 5:00 p.m.
Bill Shannon
811 S.E. 15th Street
Ft. Lauderdale, Florida
Phones 305 – 523-2937 or 305 – 524-3339

January

1 FLORIDA NEW YEARS' MEET
Riding 4.4¾" gauges
Enos A. Hostetter
1527 Ingram Avenue
Sarasota, Florida 33580

Regular Run Days

GOLDEN GATE LIVE STEAMERS
1st Sunday each month, weather permitting
3½" – 5" – 7½" – 4⅝" – 7½"
Gordon French, Secretary
614 18th Avenue
Menlo Park, Calif. 94025
Phone 415 – 325-4209

RIVERSIDE LIVE STEAMERS
4th Saturday, Sunday each month
Hunter Park - Iowa & Columbia Ave.
Riverside, California
Frances H. Smith, Secretary
5536 Dewey Avenue
Riverside, California 92504
Phone 686-5553 or 683-9628

LOS ANGELES LIVE STEAMERS
1st Sunday each month
3½" – 4⅝" – 7½"
Joel Corbin, Secretary
12723 Kittridge Street
North Hollywood, Calif. 91606

MONTREAL LIVE STEAMERS
1st Sunday of each month
3½" – 4⅝" – 7½" gauges
S. H. Galloway, Secretary
53 Brentwood Road
Beaconsfield, Quebec, Canada

PIONEER VALLEY LIVE STEAMERS
2nd Sunday each month
3½" – 4⅝" – 7½"
Brenton W. Barnfather, Secretary
3 Fleetwood Drive
Sandy Hook, Conn. 06482

RAILROADERS CLUB OF SAN ANTONIO
3rd Sunday each month, weather permitting
7½" gauge
Cas Beck
2626 McCullough Avenue
San Antonio, Texas 78212

JAMUL VALLEY RAILROAD
3rd Sunday each month
7½" gauge
Harry F. Sears
Route 1, Box 47-A
Jamul, California 92035

SOUTHERN CALIFORNIA LIVE STEAM CLUB
1st Sunday each month
3½" – 4⅝" – 7½"
K. G. Kepner, Secretary
2764 Maple
Rialto, California 92376

WABASH, FRISCO & PACIFIC RAILROAD
12" gauge
Grand and First Streets
4 miles south of Post Office
Glencoe, Missouri

VAUSHAUM LIVE STEAMERS
1st Sunday each month
8:30 a.m. – 4:00 p.m.
2½" gauge, on Route 126
Ashland, Mass.
Wendell C. Bishop, Secretary
52 Pond Street
Natick, Mass. 01760

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Jamesville, N. Y. 13078

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WANTED

Fairly small 1" scale or medium sized 3/4" scale used Live Steamer in running condition at reasonable price. Send condition, price, photos to Scott Lefever, 135 Strasburg Pike, Lancaster, PA. 17602.

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SERIES "D"	
MICHIGAN CENTRAL DEPOT	C-1-D
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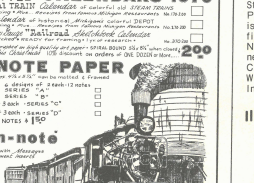

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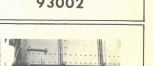

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